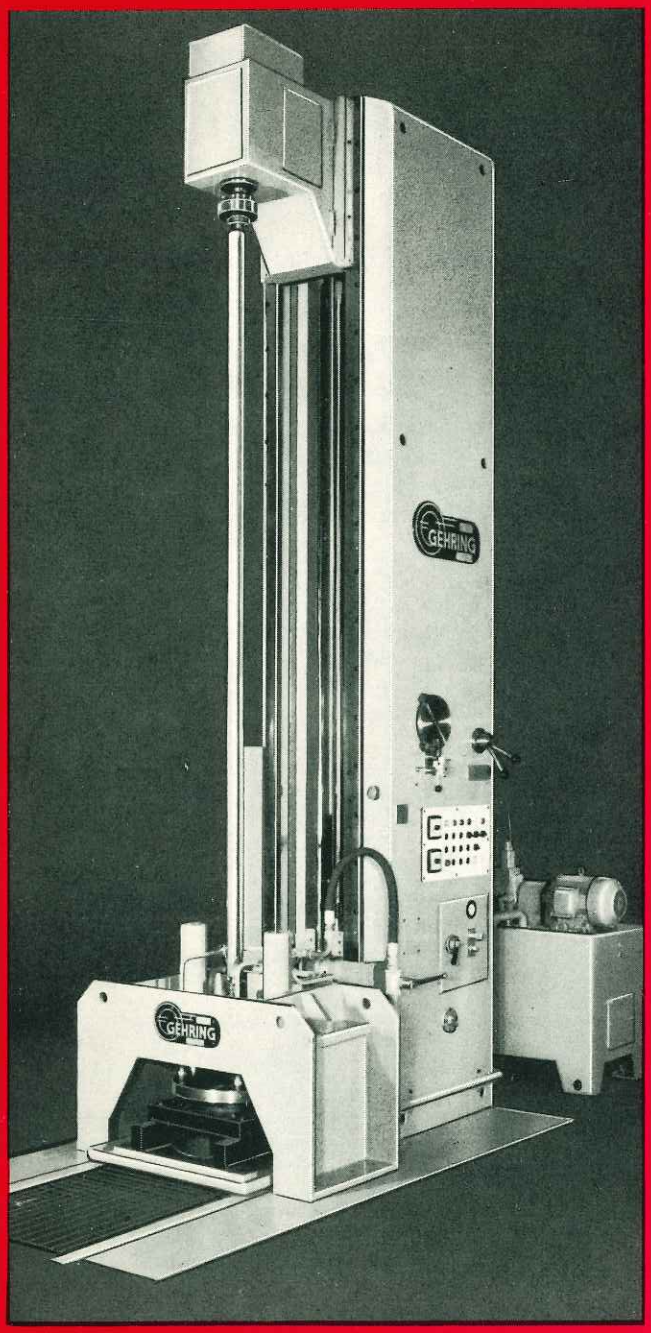
WICKMAN-GEHRING

451-919



HONING MACHINES

Honing tools for internal and external machining with diamond stones or other abrasive stones.

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The honing machines shown on the following pages are only a part of the full line of Gehring . . . the most extensive range of precision honing machines in the industry.

Thirty years of Wickman experience, as Machine Tool Specialists and Manufacturers of Diamond Products and other tooling, has been joined with Gehring's fifty years of experience in manufacturing the world's leading Honing Machines and Tooling. Together, we offer true abrasive machining for rapid stock removal and any required surface finish.

THE Wickman CORPORATION

10325 CAPITAL AVENUE
OAK PARK, MICH. 48237
Phone: 313-548-3822

Transfer honing machine, Series III

Fitted with 2 spindles with air sizing control for honing cylinder liners for diesel engines in 2 operations. Each honing station is independently loaded by the transfer device, so that idle time is reduced to a minimum.

Floor to floor time per workpiece: 50 secs.

Material: Chrome Molybdenum Alloy

Stock Removal: .0015"-.0025"

Surface after honing: 25-60 RMS

Bore geometry after honing: .0004"

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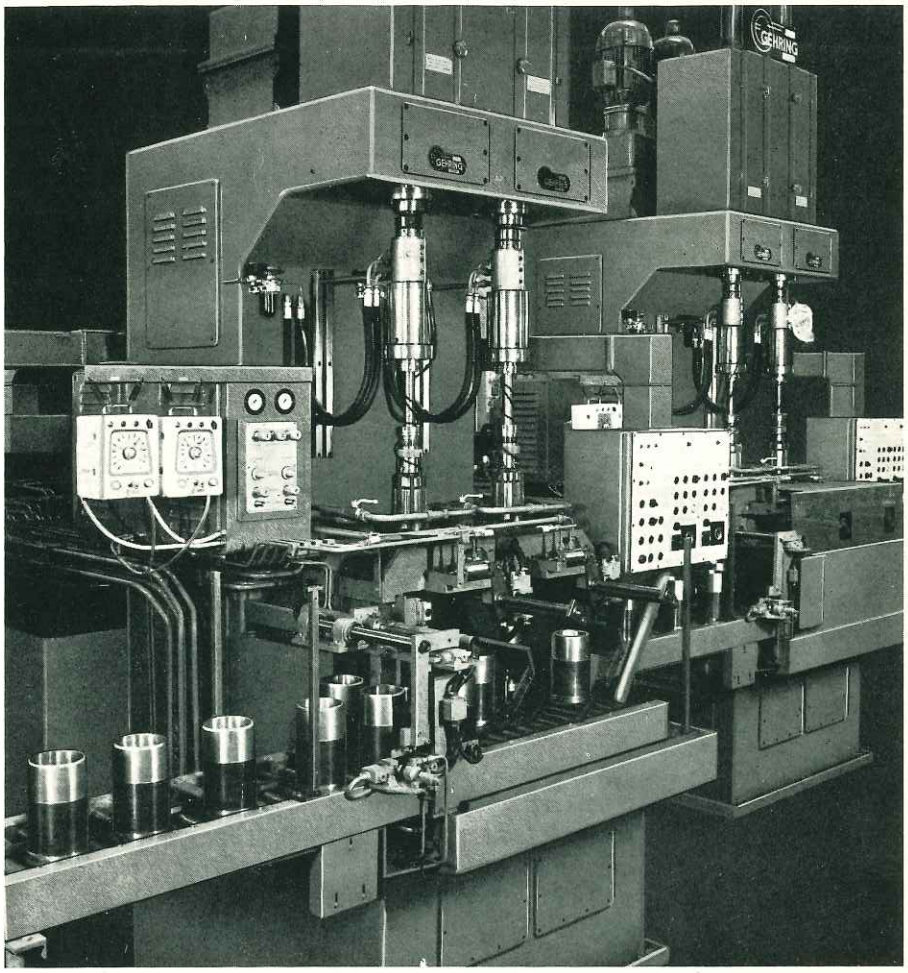
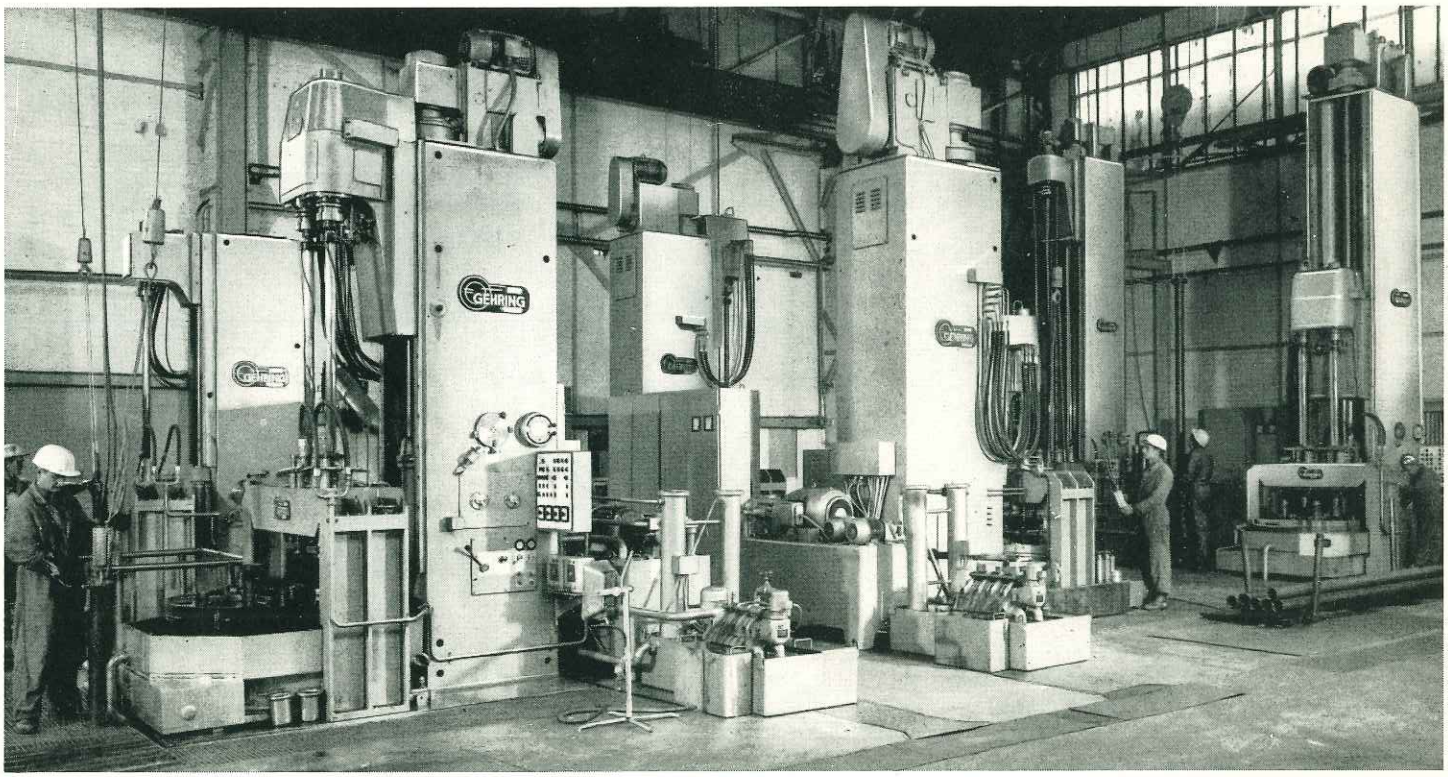
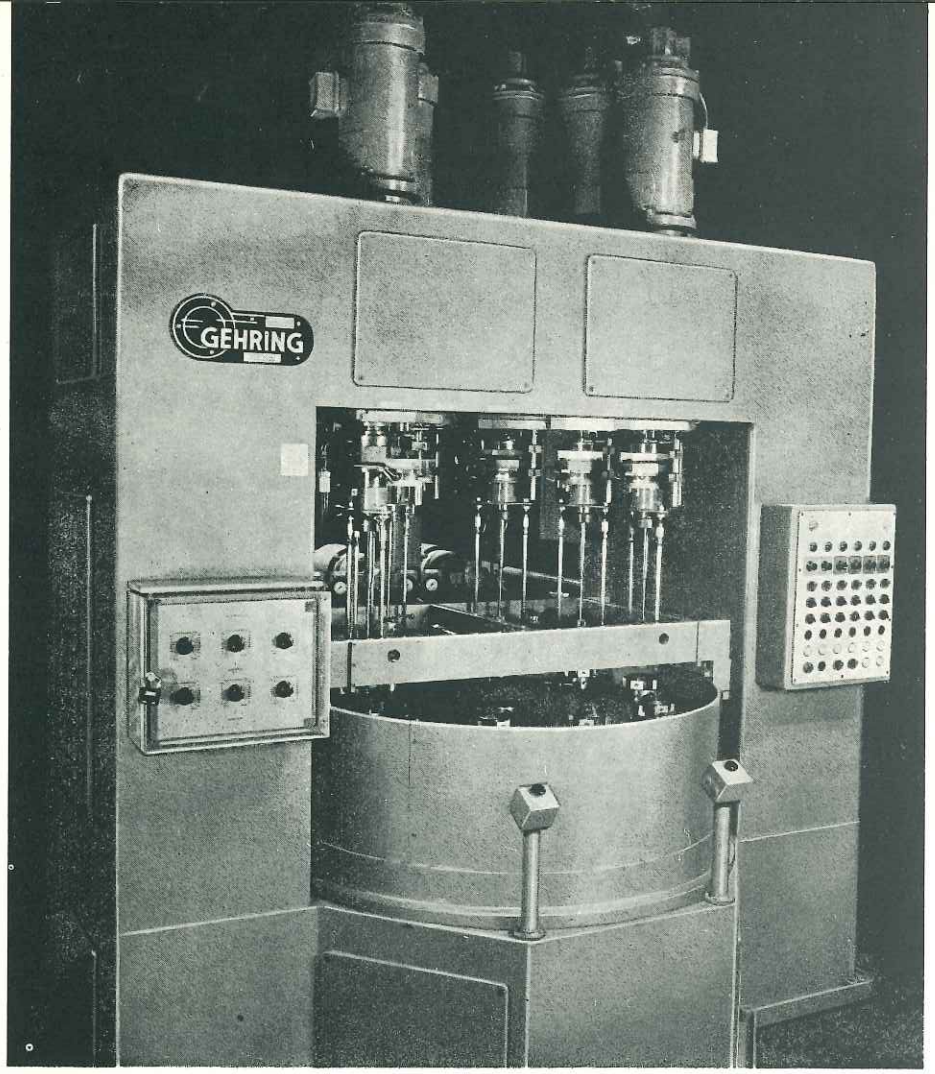




View of part of a large honing unit, Series V

For honing hydraulic and pneumatic tubes to max. 315" length and 15-3/4" dia. Machining of the tubes is carried out in a rough and finish hone sequence on Gehring high capacity machines. Average stock removal per tube with approx. 4-3/8"-5-1/8" dia. is .004" per min. on dia.



6 Spindle Rotary Transfer Honing Automatic, Series I

With 3 independently working spindles with sizing control for rough honing and 3 for finish honing injection pump cylinders.

Cycle time for 3 workpieces 55 sec.

Material X-15

Stock Removal .004"

Surface after honing = 1.2RMS

Bore geometry after honing .000040"-.000090"

Transfer Unit P5-150

This is fitted for fully-automatic honing of compressor housings with a total of 5 stations.

Station 1 and 2

Horizontal cylinder bore rough and finish honing.

Stations 3 and 4

Vertical crank bore rough and finish honing.

Station 5

Crank bore thrust face with rolling die.

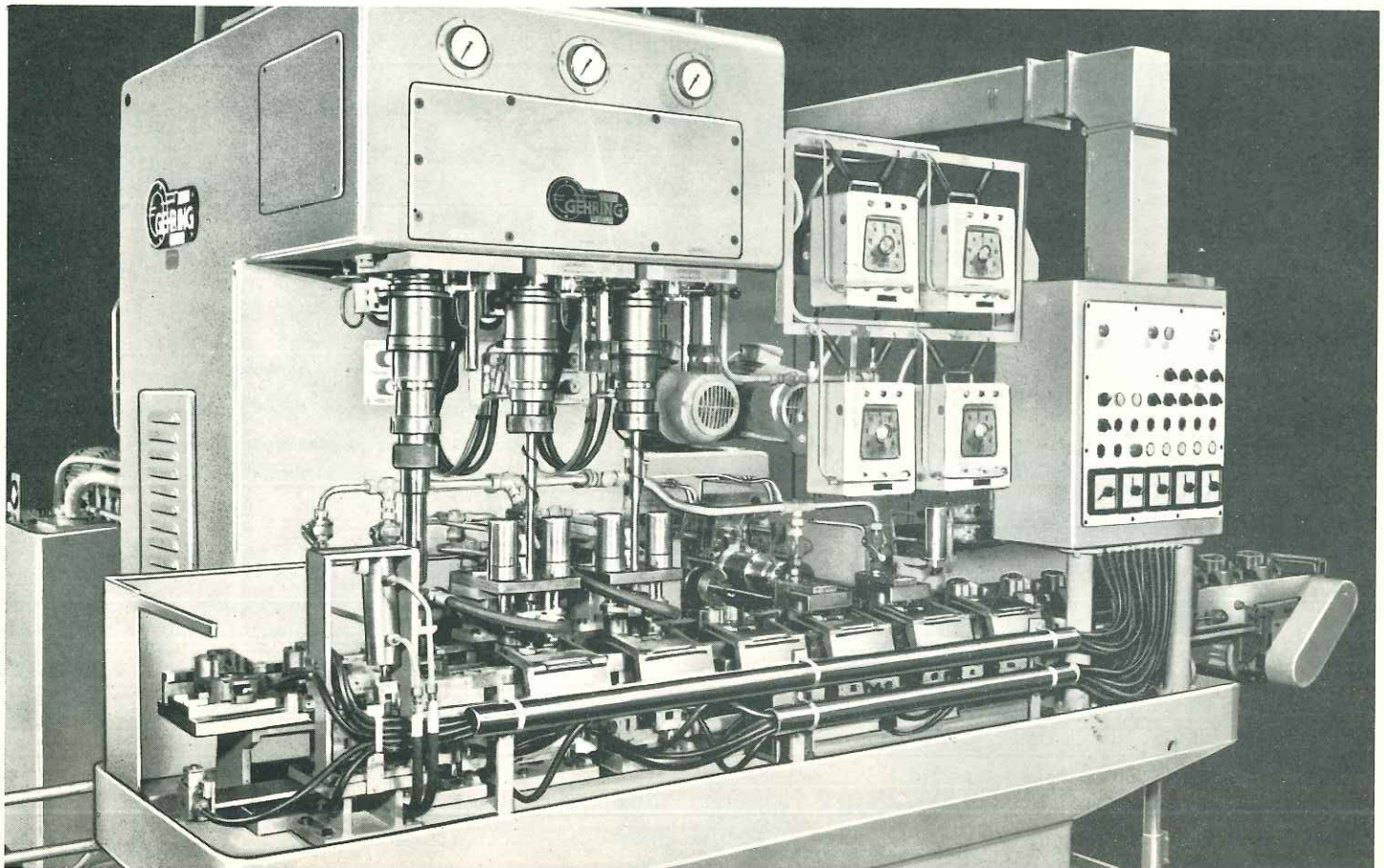
Honing is carried out with diamond honing stones and pneumatic size control.

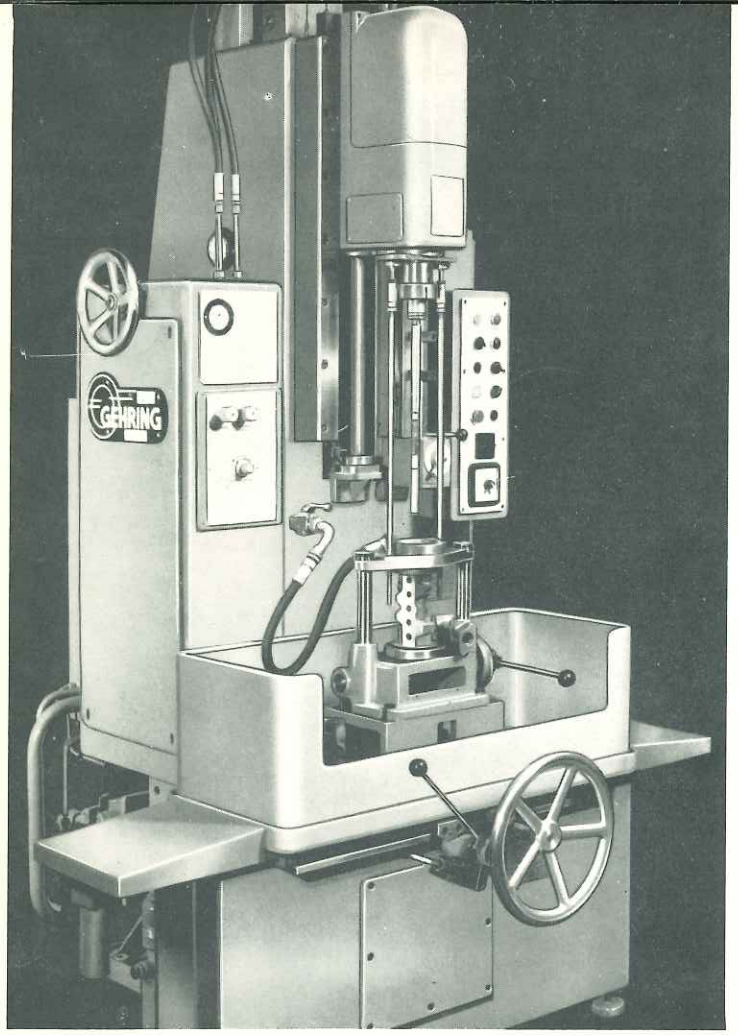
Capacity per hour: 220 workpieces at 85% machine load.

Stock removal: .002"

Surface finish: 8-10 RMS

Bore geometry: .0002"





Honing Machine KS-500

fitted for honing a control block.

Equipped with hand-operated longitudinal table, sizing control and universal clamping and adaption fixture.

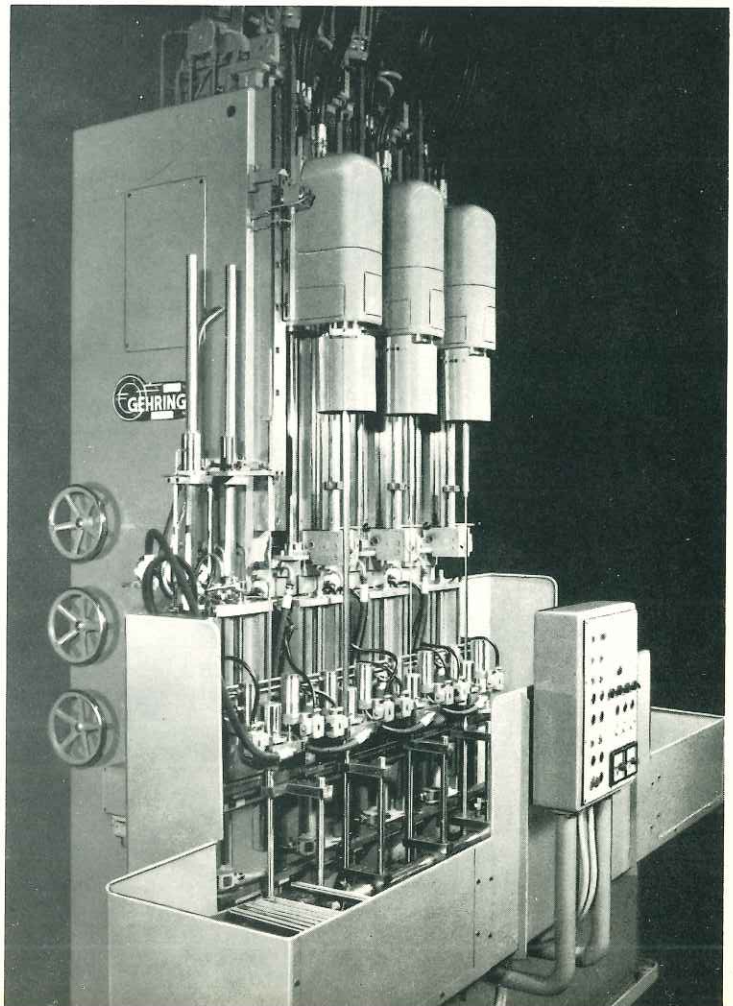
Material: Cast Iron

Stock removal: .002"

Surface finish: 10-12 RMS

Geometry after honing: .0007"-.00075"

Honing time: 35 sec.



Honing Machine KS3-750

is fitted for progressive honing of rifle barrels in 3 operations.

Equipped with 3 independently working spindles.

Gehring transfer fixture with magazine feed and discharge magazine, checking station for rough machining and size control on one spindle, time control on 2 spindles.

Cycle time: 2.5 min. at bore dia. of 5/16" x 20"

Stock removal: .003"/Dia.

Surface after honing: 12 RMS

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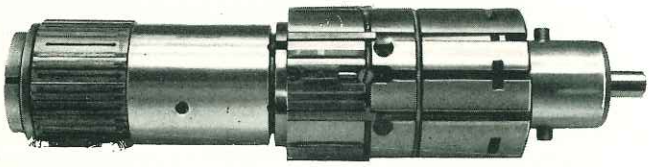
Honing Heads

TN

Honing heads of standard types

for machining bores .196"-39.375" diameter. Honing stone lengths up to 29.5".



TD

Double and multiple bore honing heads

for honing several in-line bores of equal or different diameters such as link shaft pin bores, camshaft and main bearing bores. According to applications, the honing heads are fitted with one or separate feeds.

TS

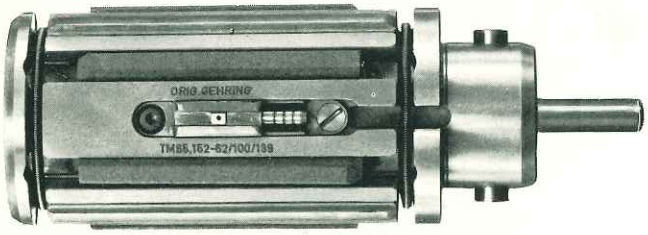
Blind hole honing heads

The shoes in this honing head are reaching the bottom end and with assistance of the hydraulic stroke delay unit they allow honing blind end bores with a minimum undercut.

TLN

Honing heads with adjustment stones

fitted with vitrified half circle shoes to achieve high geometric accuracy especially in bores for control valve for hydraulics and pneumatics.



TM

Honing heads with air sizing control

fitted with two air jets for automatic size control using the Gehring direct air measuring device.

TE

Single stone honing heads

Specially used for honing hydraulic and pneumatic control valve bores as well as injection pump cylinders.

A

External honing heads

Operated by a hydraulic feeding unit giving on rotation-symmetrical parts as pins, driving shafts, piston rods and piston rings, an econimical o. d. machining method.

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Honing Machine Application Data

This information sheet provides typical examples of honing applications. Honing is so widely used that within the space available only a representative selection can be shown.

The most important elements of our machines are designed as basic units. Subsequently, this enables us to assemble either single or multi-spindle machines to meet requirements.

In the following table we have subdivided the different machine types under series I-VI, the first five in the series being vertical honing machines and series VI being horizontal types.

The working spindles of series I and II can also be arranged horizontally where this is a more suitable arrangement for the workpiece.

In columns 2 and 3 are given the bore dimensions which can be used economically with the individual series.

The final column indicates typical areas of use to which honing has been applied.

Series	Bore Diameter		Bore Length		Field of Application
	mm	inches	mm	inches	
I	4-63 (90)	.157-2.500 (3.543)	–100 –250	3.937 9.842	Machines predominantly used for honing automobile connecting rods, gear wheels, rocker arms, injection pump cylinders, compressor casings, slide rings, pulleys, control valves for hydraulics and pneumatics and measuring rings.
II	4-63 (90)	1.57-2.500 (3.543)	–400 –650 –900	15.748 25.562 35.437	For production of ball races, smooth bore gun barrels, cylinders and control valves for hydraulics and pneumatics, spindle sleeve guides etc. Also the external honing of piston rods for shock absorbers.
III	12-180 (250)	.472-7.00 (9.842)	–200 –350 –450 –600	7.875 13.750 17.716 23.625	Widely used in the automobile industry for machining cylinder bores, cylinder liners, finned cylinders and brake drums.
IV V	24-250 (350) 55-1000 (1200)	.944-9.842 (13.750) 2.165-39.375 (47.250)	–400 | –4,700	15.748 | 185.039	A high capacity series for machining hydraulic tubes, cylinder liners for diesel engines, crankshaft bores in cylinder blocks and also the external honing of piston rods and drive shafts.
VI	32-1000 (1200)	1.250-39.375 (47.250)	–12,000	472.500	Horizontal machines for honing hydraulic tubes and iron moulds for the plastic tube industry. Workpiece lengths up to 945 inches.

Additional Equipment

Sizing Controls.

For automation of the operating cycle, Gehring pneumatic and mechanical sizing control equipment has proved accurate and reliable on many different applications.

Honing Fixtures.

Fixtures are available from simple hand operation to fully automatic transfer. Several stations for work handling and magazine loading can be provided.

Coolant Units.

In addition to the standard unit, extra equipment can be provided to meet requirements for coolant filtering (magnetic, paper or centrifugal clarification). Coolant refrigeration units can also be furnished.